

## P E T I T I O N

1 Commissioner for Patents  
Alexandria, VA 22313

Your Petitioner, RAYMON W. LUSH, a citizen of the United States and a resident  
of the State of Nebraska, whose post office address is 410 Main Street, Bloomfield,  
5 Nebraska 68718, prays that Letters Patent may be granted to him for the improvement  
in

### A COLLAPSIBLE FEEDER

as set forth in the following specification.

#### 10 BACKGROUND OF THE INVENTION

##### 1. FIELD OF THE INVENTION

This invention relates to a collapsible feeder and more particularly to a collapsible  
feeder for birds, squirrels and the like which is convenient to fill, convenient to install,  
convenient for wild game to perch upon, and which is resistant to damage from squirrels  
15 and other feeding wildlife. Even more particularly, the collapsible feeder of this  
invention includes means for yieldably maintaining the feeder in its extended position  
while the feeder is being filled and/or hung.

##### 2. DESCRIPTION OF THE RELATED ART

20 Selectively collapsible containers are commonly used to hold seeds, suet and the  
like as food for wild animals such as birds, squirrels, etc. Many of the collapsible wild  
game feeders of the prior art are constructed from plastic polymer, natural fiber mesh or  
netting. Mesh or netting feeders have the advantage of not requiring a rod, dowel or  
25 other support for small birds, since the birds can perch on the mesh or net and feed at

1 any exposed location on the feeder. Examples of mesh or net feeders of the prior art  
including the Thistle Pouch brand feeder manufactured by Havegard Farm, Inc. of  
Algoma, Wisconsin, and Feather Friends E-Z Feeders brand wild bird feeder marketed  
by Canine's Choice of Marion, Indiana. Other types of collapsible feeders are disclosed  
5 in U.S. Patent Nos. 5,203,281; 4,706,871; and 4,026,025. Another type of collapsible  
wild game feeder is described in applicant's U.S. Patent No. 5,479,881. The feeder of  
the '881 patent consists of a solid, weather-resistant bag fitted with openings at its base  
to allow attachment of rods for perching and access to the seed or other food contained  
in the bag.

10 Although many collapsible wild game feeders of the known art are convenient to  
install and highly attractive to wild game when they are first placed in use, none of the  
collapsible feeders of the known art are suitable for the feeding of squirrels or other  
large, aggressive feeding wildlife such as jays and monk parakeets. Squirrels and other  
15 large, aggressive feeding wildlife quickly tear the mesh of collapsible feeders of the  
known art and create holes through which the food spills from the feeder onto the  
ground below. Similarly, squirrels and large birds can easily enlarge the feeding  
openings or simply create new openings in the walls of the feeder of the '881 patent.  
After squirrels or large birds have damaged the net, webbing or walls of feeders of the  
20 known art, the food spills out and is no longer available to attract wildlife to the feeder.  
Further, the spilled feed creates additional problems by attracting mice and other pests  
that feed on the ground.

1 Wire mesh feeders constructed of rigid steel wire are also well known to those  
skilled in the art of wild game feeding. The rigid steel wire mesh feeders are frequently  
used to hold blocks of suet or mixtures of seed, animal fat, peanut butter and the like.  
Although the rigid wire mesh feeders of the known art are resistant to chewing by  
5 squirrels and pecking by aggressive feeding birds, the rigid wire mesh feeders are not  
selectively collapsible for storage, shipment, etc. When the rigid wire mesh feeders are  
bent, dented, flattened or crushed, they cannot be expanded and reused without  
suffering metal fatigue and damage to their attachments, connections and welds. One  
further disadvantage of many collapsible feeders is that they are suited for only one size  
10 of feed.

In an effort to overcome the disadvantages of the prior art collapsible feeders,  
applicant previously designed collapsible feeders which are disclosed in U.S. Patent  
Nos. 6,047,661 and 6,073,582. In the '661 and '582 patents, the mesh openings were  
15 designed to accommodate a specific seed size. Applicant provided an improved  
collapsible feeder which is disclosed in U.S. Patent No. 6,427,629 which issued on  
August 6, 2002. Although applicant's feeder of U.S. Patent No. 6,427,629 truly  
represented an improvement over the prior art, the feeder sometimes would not remain  
in its extended position while the feeder was being filled or hung which sometimes  
20 resulted in feed flowing from the feeder from between adjacent rings. The feeders of  
applicant's earlier patents truly represented a significant advance in the art and it is  
believed that the collapsible feeder described herein represents an improvement over  
applicant's earlier designs.

## SUMMARY OF THE INVENTION

1 A collapsible feeder for birds, squirrels and the like is disclosed and includes a  
collapsible feeder body, having upper and lower ends, comprising a base and a rim, a  
series of hollow body members of graduated diameters which are extendible to form a  
5 feeder body, the segment of smallest diameter being joined to the base, the other  
segments being collapsible around the segment of smallest diameter inwardly of the  
rim. A feeder lid is removably positioned on the upper end of the segment of greatest  
diameter when the feeder body is in the extended position. A hanger is pivotally  
10 secured to the roof of the uppermost segment for supporting the feeder on a branch,  
hanger, etc. The segment of smallest diameter has feed outlets formed therein so that  
feed in the feeder body may pass outwardly through the feed outlets onto the base  
inwardly of the rim. The feeder body may be annular, square, rectangular or any other  
suitable configuration. The feeder may be comprised of metal, plastic, glass or a  
15 combination of the same. The feeder can accommodate any kind of bird feed or even a  
mix of different seeds. The feeder includes means for yieldably maintaining the feeder  
in its extended position to facilitate the filling and hanging of the feeder.

20 It is therefore a principal object of the invention to provide a selectively  
collapsible feeder for birds, squirrels and other wild game.

Yet another object of the invention is to provide a selectively collapsible feeder  
which is constructed of a metal, glass or plastic material or combinations thereof.

Still another object of the invention is to provide a selectively collapsible feeder  
which occupies a minimum of space for shipping and storage when empty.

1 Still another object of the invention is to provide a selectively collapsible feeder  
which is suitable for the feeding of both small perching birds in addition to squirrels, jays  
and other more aggressive feeding wildlife species.

5 Yet another object of the invention is to provide a selectively collapsible feeder  
which includes means for yieldably maintaining the feeder in a straight extended  
position.

These and other objects will be obvious to those skilled in the art.

#### BRIEF DESCRIPTION OF THE DRAWINGS

10 Figure 1 is a perspective view of the feeder of this invention in an extended  
position;

Figure 2 is a side view of one embodiment of the invention in an extended  
position with portions thereof cut away to more fully illustrate the invention;

Figure 3 is a perspective view of the feeder in a collapsed condition;

15 Figure 4 is a side view of the feeder of Figure 2 in a collapsed position with  
portions thereof cut away to more fully illustrate the invention;

Figure 5A is a sectional view of the structure utilized in the embodiment of Figure  
2 to selectively maintain the feeder in its extended position;

20 Figure 5B is a sectional view illustrating a modified means for selectively  
maintaining the feeder in its extended position;

Figure 6 is an exploded perspective view illustrating the cover of the feeder  
removed from the feeder; and

1 Figure 7 is a perspective view of one of the rings or segments of the embodiment of Figure 2 with a portion thereof cut away to more fully illustrate the invention.

#### DESCRIPTION OF THE PREFERRED EMBODIMENT

5 The collapsible feeder of this invention is referred to generally by the reference numeral 10. Feeder 10 includes a feeder body 14 which has upper and lower ends. Feeder body 14 comprises a base 16, rim 18, and a series of hollow body segments 20 of graduated diameters which are extendible to form a feeder body. The segment of smallest diameter (the lowest segment 20) is joined to the base 16. The other segments 20 are collapsible around the lowermost segment of smallest diameter inwardly of the rim 18, as illustrated in Figure 4. The uppermost segment 20 includes a roof section 21 which extends downwardly and outwardly from the upper end thereof. A hanger 22 is pivotally connected to the roof 21 of the segment of greatest diameter (the uppermost segment 20) for supporting the feeder from a suitable support, branch, etc. 10 Roof 21 defines a central opening 23. The numeral 24 refers to a cone-shaped lid which selectively closes opening 23. Lid 24 includes a recessed handle 31, as seen in Figures 3 and 4. A plurality of feed outlet openings 32 are formed in the segment 20 of smallest diameter (the lowermost segment 20) to enable food within the feeder body to pass outwardly therethrough inwardly of the rim 18, as seen in Figure 1. 15 20

25 Two different embodiments of the feeder are disclosed with those two embodiments each including structure or means to maintain the feeder in its extended, upright and straight position to facilitate the filling of the feeder and to facilitate the hanging of the feeder from an appropriate support.

1 In Figure 2, the lowermost segment or ring 20a has a shoulder 34 which extends  
outwardly therefrom. The next segment or ring 20b has a lower shoulder 36 which  
extends inwardly therefrom, as seen in Figure 2. The interior surface of segment or ring  
20a has a plurality of spaced-apart raised lips or protrusions 35 extending inwardly  
5 therefrom which are positioned immediately above shoulder 34 when shoulders 34 and  
36 are in abutting engagement, as seen in Figure 2. Upper shoulder 38 extends  
outwardly from the upper end of segment or ring 20b. Likewise, segment or ring 20c  
has lower and upper shoulders 40 and 42, respectively, and a plurality of spaced-apart  
raised lips or protrusions 44. Similarly, segment or ring 20d has lower and upper  
10 shoulders 52 and 54, respectively, and a plurality of spaced-apart raised lips or  
protrusions 56. Segment 20e has lower and upper shoulder 58 and 60, respectively,  
and a raised lip or protrusion 61. Segment 20f includes lower and upper shoulders 62  
and 64, respectively, and a plurality of spaced-apart raised lips or protrusions 66. The  
15 uppermost segment 20g includes lower shoulder 68 and a plurality of spaced-apart  
raised lips or protrusions 70. Although the protrusions or lips are described as being  
spaced-apart, they could be continuous or ring-like if so desired. As seen in Figure 2,  
the roof 21 extends downwardly and outwardly from the upper end of segment 20g.  
Roof 21 is provided with a plurality of spaced-apart openings or slots which have an  
20 enlarged portion 74 and a narrow portion 76. Lid 24 is provided with a plurality of  
spaced-apart locking lugs 78 which extend downwardly from the periphery thereof. Lid  
24 is selectively maintained on roof 21 by inserting the lugs 78 downwardly through the  
enlarged portions 74 of slots 74 and then rotating the lid 24 in a counterclockwise  
25

1 direction so that lugs 78 are positioned beneath the narrow portions 76 of slots 72.  
1 Since the lugs 78 have a dimension which is greater than the dimension of narrow  
portion 76, the lid 24 cannot be raised with respect to the roof 21, thereby maintaining  
the lid 24 on roof 21.

5 In the embodiment of Figure 5B, the lowermost segment or ring 120a has its  
lower end secured to the pan or tray of the feeder and has a plurality of outwardly  
extending, spaced-apart raised areas or protrusions 122 formed thereon, each of which  
defines a shelf 124 at the upper end thereof. Raised areas 122 may be continuous or  
annular rather than being spaced-apart.

10 Segment or ring 120b has outwardly extending annular raised lip or protrusion  
126. Similarly, the segments or rings above segment 120b have outwardly extending  
raised areas or protrusions provided thereon, respectively, as well as the spaced-apart  
raised lips.

15 The collapsible feeder of this invention will normally be in the collapsed position  
during shipment or storage with the configuration thereof occupying very little space in  
the collapsed position. When it is desired to move the feeder to its extended position for  
feeding purposes, the hanger 22 is moved upwardly with respect to the base 16 to  
cause the segments 20 to move to the straight extended position to form the feeder  
20 body. The close engagement of the segments 20 with one another prevents feed from  
passing downwardly therebetween. When feed is placed in the interior of the feeder  
body, a certain amount of the feed passes outwardly through the openings 32 onto the  
base 16 inwardly of the rim 18. The wild animals may perch on the rim 18 to feed.



1           Additionally, in the embodiment of Figures 2 and 5A, when the feeder is in the  
straight extended position, the outwardly extending shoulders on the upper ends of the  
segments 20a-20f will engage the inwardly extending shoulders on the lower ends of  
the segments thereabove. The segments are yieldably maintained in their extended  
5       positions by the inwardly extending protrusions which are positioned immediately above  
the outwardly extended protrusions. In the embodiment of Figure 5B, the segments are  
maintained in their extended position by the positioning of the protrusions 126 above the  
shelf 124 and the frictional engagement of the protrusions 126 with the outer wall  
surface of the segment adjacent thereto above the shelf 124.

10           Thus, the structure disclosed herein enables the feeder to be extended from its  
collapsed position to its extended position and yieldably maintained in the extended  
position by the structure illustrated in Figures 5A and 5B to facilitate filling and hanging  
of the feeder.

15           When the feeder is empty and it is desired to collapse the feeder, downward  
force is applied to the uppermost segment or the lid 24 sufficient to cause the outwardly  
extending shoulders (i.e., 34) to ride over the protrusion 35 or in the case of the  
embodiment of Figure 5B, cause the protrusions 126 to pass over or ride over the shelf  
20       124.

25           Although it is preferred that the base 16 and rim 18 be circular and that the  
segments 20 are ring-shaped or annular, the feeder could have a square shape, a  
rectangular shape or any other shape deemed desirable. It is preferred that the feeder

1 of this invention be comprised of metal, but it could also be comprised of plastic or  
glass, or any combination thereof.

5 It can therefore be seen that a novel bird feeder has been provided which may be  
collapsed for storage or shipment, but which may be extended for use. The bird feeder  
of this invention is extremely durable due to the construction thereof.

Thus it can be seen that the invention accomplishes at least all of its stated  
objectives.